An Introduction to EPA's TCM/ Commuter Choice Spreadsheet

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Voluntary Measures Workshop

Dallas, Texas, June 25th, 1999

Programs which can be evaluated

- Transit fare decreases or incentives reducing transit costs
- Transit service improvements
- Carpooling and vanpooling support programs
- Financial incentives
- Change in travel time/cost
- Non-motorized commute programs
- Alternative work schedules
- Telecommuting

Basic Steps

- Compile information on local travel data/ program information
- Estimate mode share impacts of program (use lookup tables or pivot point method)
- Calculate Trips, VMT, and speed impacts
- Calculate emissions impacts

Types of programs

- **"Soft" incentives (commuter choice programs and alternative work schedules)**
  - provide encouragement
  - inform travelers of alternatives
  - remove impediments
- **Programs leading directly to changes in travel time or cost**
  - financial incentives
  - changes in transit service

Calculating mode share impacts – soft incentives

- Impacts are estimated using simplified look-up tables
- For commuter choice support programs – tables specify percent likely to use mode based on program effort and office type, and model calculates new mode shares
- For alternative work schedules, tables specify percent likely to participate depending on program type and model calculates effect on peak period driving (also depend on length of peak period)

Calculating mode share impacts – time and cost changes

- **Programs impacting time – improved transit service, changes in walk time, more frequent transit service**

- **Programs impacting costs – changes in parking costs for drive alone, carpool and vanpool modes, parking cashout, transit subsidies**

Methodology for estimating effect of time and cost changes

- b Pivot point (logit modeling) approach – relates attractiveness of a travel mode to its share of the travel market
- b Coefficients are used to estimate changes in utility of a mode, which is used to estimate new mode share
- b Local and default coefficients for in vehicle travel time, out of vehicle travel time and out of pocket travel cost

Calculating Trips, VMT and Speed impacts

- b Calculate trips – Multiply mode share by affected employment and trips per employee, accounting for vehicle occupancy
- b Calculate changes in VMT – factor in average trip length
- b Allocate trips between peak and off-peak periods
- b Calculate changes in travel speed based on percent change in VMT

Calculating Emissions Impacts

- b Model consists of simplified MOBILE model runs
- b Enter basic inputs to simulate local conditions
- b Calculate default fleet mix (which can be changed by the user)

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DEMONSTRATION

EPA TCM/COMMUTER CHOICE SPREADSHEET MODEL